

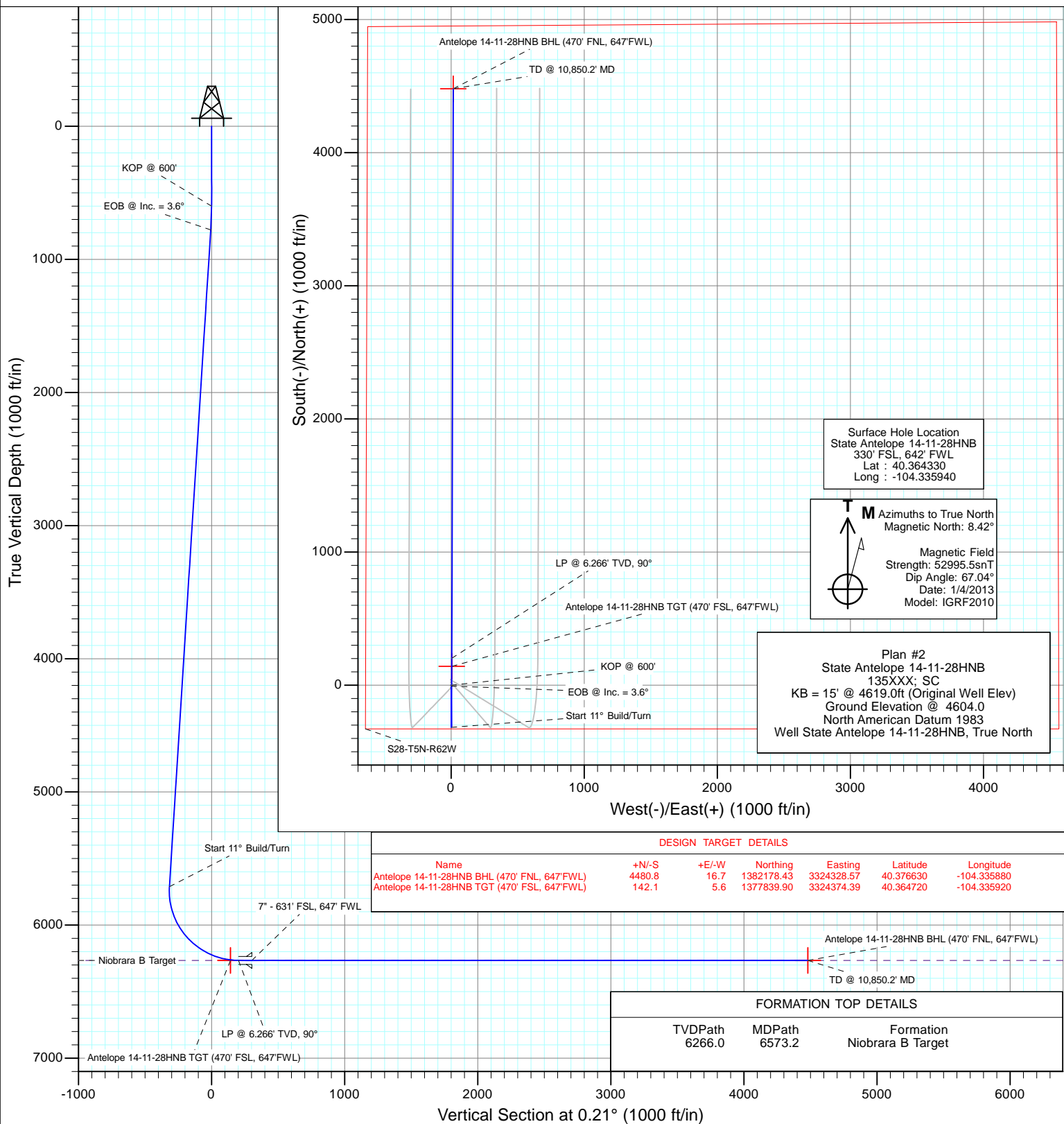


Project: Weld County  
Site: State Antelope J-28 Pad  
Well: State Antelope 14-11-28HNB  
Wellbore: HZ  
Design: Plan #2



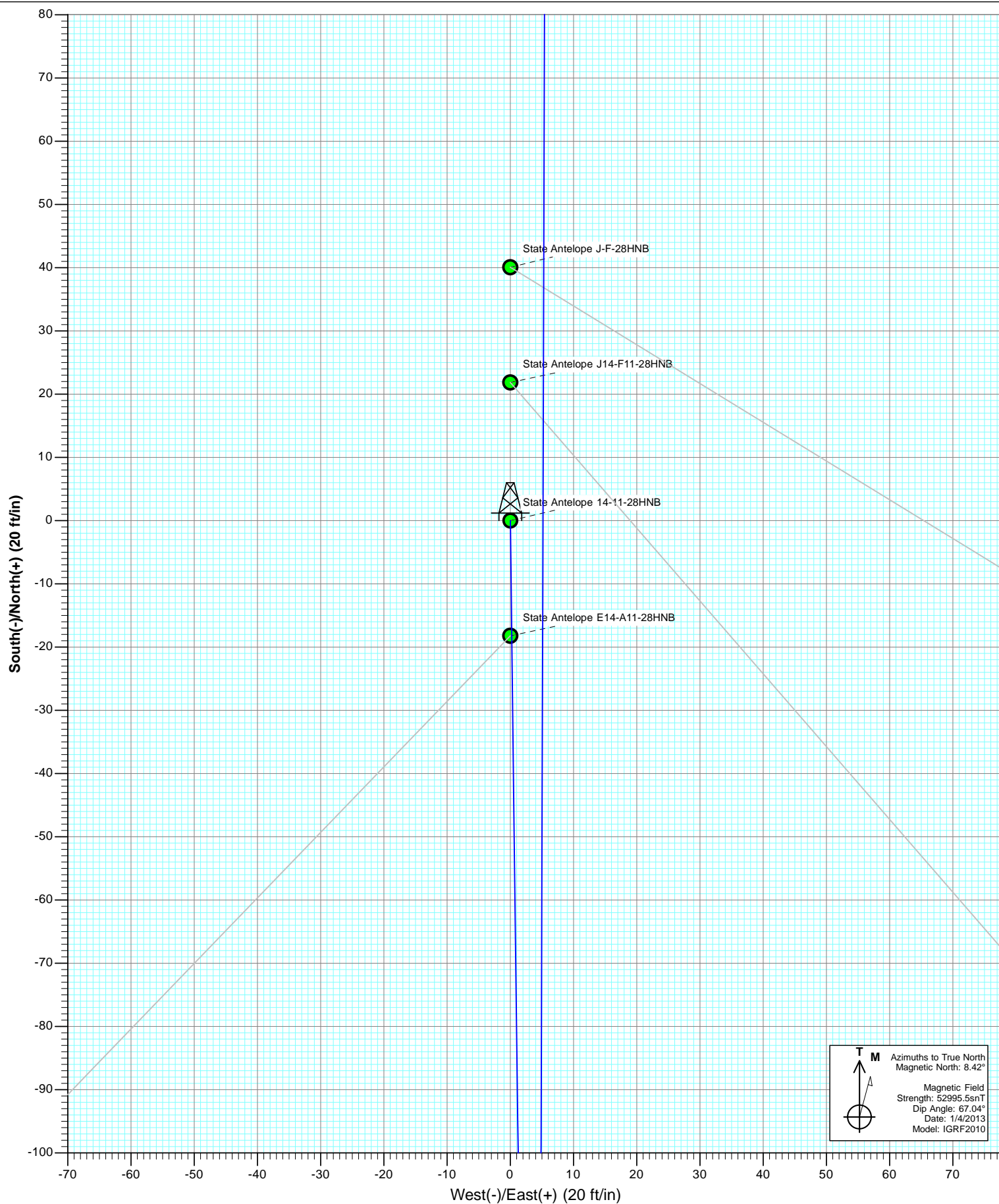
#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	780.0	3.60	179.30	779.9	-5.7	0.1	2.00	179.30	-5.7	
4	5722.3	3.60	179.30	5712.4	-316.0	3.9	0.00	0.00	-316.0	
5	6573.2	90.00	0.15	6266.0	203.9	5.7	11.00	-179.15	203.9	
6	10850.2	90.00	0.15	6266.0	4480.8	16.7	0.00	0.00	4480.9	Antelope 14-11-28HNB BHL (470' FNL, 647'FWL)



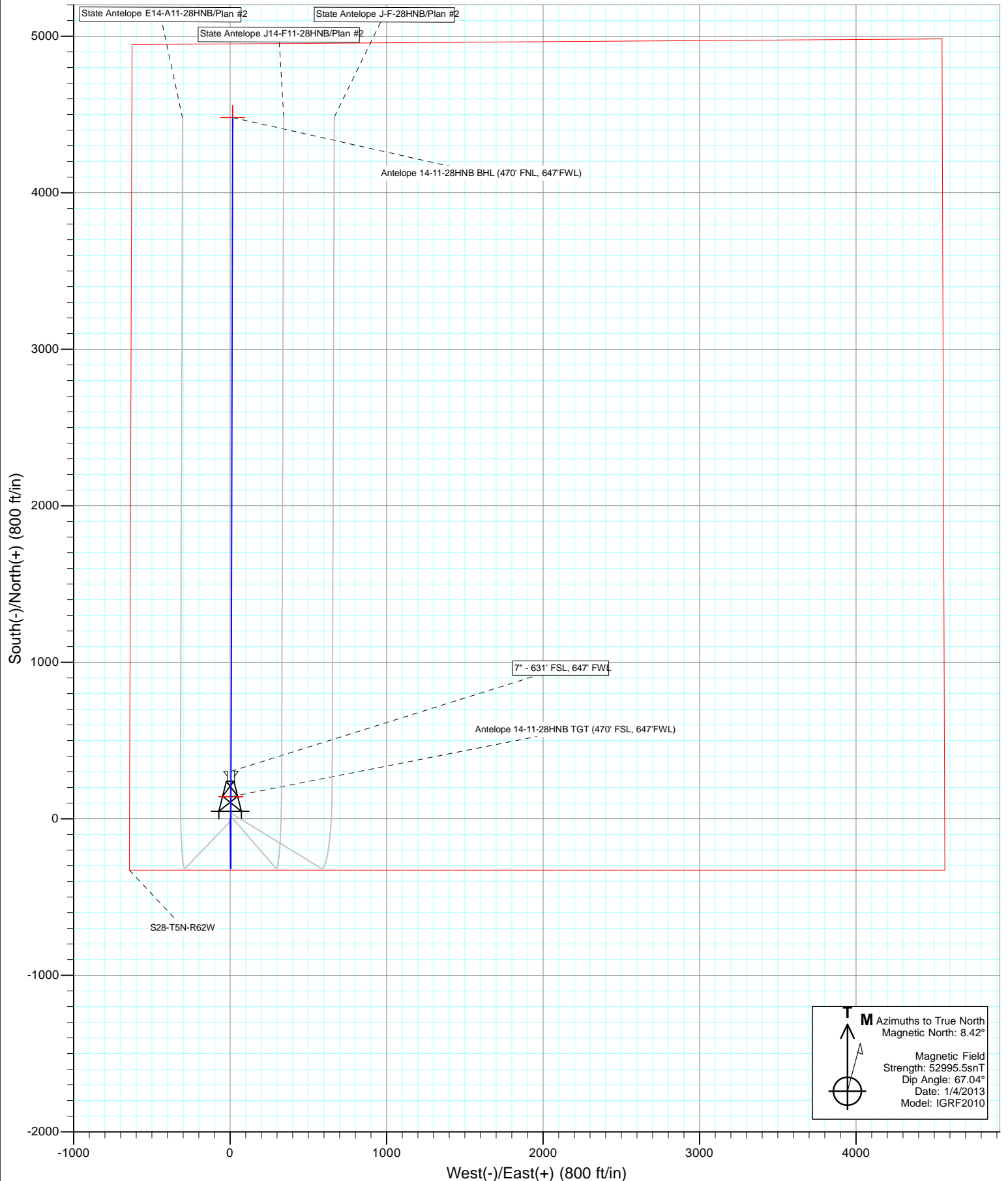


Project: Weld County  
Site: State Antelope J-28 Pad  
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**T** M Azimuths to True North  
Magnetic North: 8.42°  
Magnetic Field  
Strength: 52995.5snT  
Dip Angle: 67.04°  
Date: 1/4/2013  
Model: IGRF2010

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site:</b>	State Antelope J-28 Pad	<b>North Reference:</b>	True
<b>Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

<b>Project</b>	Weld County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		State Antelope J-28 Pad			
Site Position:		Northing:	1,377,697.77 ft	Latitude:	40.364330
From:	Lat/Long	Easting:	3,324,370.68 ft	Longitude:	-104.335940
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.75 °

Well	State Antelope 14-11-28HNB					
Well Position	+N/-S	0.0 ft	Northing:	1,377,697.76 ft	Latitude:	40.364330
	+E/-W	0.0 ft	Easting:	3,324,370.68 ft	Longitude:	-104.335940
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,604.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	1/4/2013	8.42	67.04	52,996

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	0.21

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
780.0	3.60	179.30	779.9	-5.7	0.1	2.00	2.00	0.00	179.30	
5,722.3	3.60	179.30	5,712.4	-316.0	3.9	0.00	0.00	0.00	0.00	
6,573.2	90.00	0.15	6,266.0	203.9	5.7	11.00	10.15	-21.05	-179.15	
10,850.2	90.00	0.15	6,266.0	4,480.8	16.7	0.00	0.00	0.00	0.00	Antelope 14-11-28HN

# Cathedral Energy Services

## Planning Report

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<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site:</b>	State Antelope J-28 Pad	<b>North Reference:</b>	True
<b>Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	KOP @ 600'
700.0	2.00	179.30	700.0	-1.7	0.0	-1.7	2.00	2.00	
780.0	3.60	179.30	779.9	-5.7	0.1	-5.7	2.00	2.00	EOB @ Inc. = 3.6°
800.0	3.60	179.30	799.8	-6.9	0.1	-6.9	0.00	0.00	
900.0	3.60	179.30	899.6	-13.2	0.2	-13.2	0.00	0.00	
1,000.0	3.60	179.30	999.4	-19.5	0.2	-19.5	0.00	0.00	
1,100.0	3.60	179.30	1,099.3	-25.7	0.3	-25.7	0.00	0.00	
1,200.0	3.60	179.30	1,199.1	-32.0	0.4	-32.0	0.00	0.00	
1,300.0	3.60	179.30	1,298.9	-38.3	0.5	-38.3	0.00	0.00	
1,400.0	3.60	179.30	1,398.7	-44.6	0.5	-44.6	0.00	0.00	
1,500.0	3.60	179.30	1,498.5	-50.9	0.6	-50.9	0.00	0.00	
1,600.0	3.60	179.30	1,598.3	-57.1	0.7	-57.1	0.00	0.00	
1,700.0	3.60	179.30	1,698.1	-63.4	0.8	-63.4	0.00	0.00	
1,800.0	3.60	179.30	1,797.9	-69.7	0.9	-69.7	0.00	0.00	
1,900.0	3.60	179.30	1,897.7	-76.0	0.9	-76.0	0.00	0.00	
2,000.0	3.60	179.30	1,997.5	-82.3	1.0	-82.3	0.00	0.00	
2,100.0	3.60	179.30	2,097.3	-88.5	1.1	-88.5	0.00	0.00	
2,200.0	3.60	179.30	2,197.1	-94.8	1.2	-94.8	0.00	0.00	
2,300.0	3.60	179.30	2,296.9	-101.1	1.2	-101.1	0.00	0.00	
2,400.0	3.60	179.30	2,396.7	-107.4	1.3	-107.4	0.00	0.00	
2,500.0	3.60	179.30	2,496.5	-113.7	1.4	-113.6	0.00	0.00	
2,600.0	3.60	179.30	2,596.3	-119.9	1.5	-119.9	0.00	0.00	
2,700.0	3.60	179.30	2,696.1	-126.2	1.5	-126.2	0.00	0.00	
2,800.0	3.60	179.30	2,795.9	-132.5	1.6	-132.5	0.00	0.00	
2,900.0	3.60	179.30	2,895.7	-138.8	1.7	-138.8	0.00	0.00	
3,000.0	3.60	179.30	2,995.5	-145.1	1.8	-145.0	0.00	0.00	
3,100.0	3.60	179.30	3,095.3	-151.3	1.9	-151.3	0.00	0.00	
3,200.0	3.60	179.30	3,195.1	-157.6	1.9	-157.6	0.00	0.00	
3,300.0	3.60	179.30	3,294.9	-163.9	2.0	-163.9	0.00	0.00	
3,400.0	3.60	179.30	3,394.7	-170.2	2.1	-170.2	0.00	0.00	
3,500.0	3.60	179.30	3,494.5	-176.4	2.2	-176.4	0.00	0.00	
3,600.0	3.60	179.30	3,594.3	-182.7	2.2	-182.7	0.00	0.00	
3,700.0	3.60	179.30	3,694.1	-189.0	2.3	-189.0	0.00	0.00	
3,800.0	3.60	179.30	3,793.9	-195.3	2.4	-195.3	0.00	0.00	
3,900.0	3.60	179.30	3,893.7	-201.6	2.5	-201.6	0.00	0.00	
4,000.0	3.60	179.30	3,993.5	-207.8	2.6	-207.8	0.00	0.00	
4,100.0	3.60	179.30	4,093.3	-214.1	2.6	-214.1	0.00	0.00	
4,200.0	3.60	179.30	4,193.1	-220.4	2.7	-220.4	0.00	0.00	
4,300.0	3.60	179.30	4,292.9	-226.7	2.8	-226.7	0.00	0.00	
4,400.0	3.60	179.30	4,392.7	-233.0	2.9	-232.9	0.00	0.00	
4,500.0	3.60	179.30	4,492.5	-239.2	2.9	-239.2	0.00	0.00	
4,600.0	3.60	179.30	4,592.3	-245.5	3.0	-245.5	0.00	0.00	
4,700.0	3.60	179.30	4,692.1	-251.8	3.1	-251.8	0.00	0.00	
4,800.0	3.60	179.30	4,791.9	-258.1	3.2	-258.1	0.00	0.00	
4,900.0	3.60	179.30	4,891.8	-264.4	3.2	-264.3	0.00	0.00	
5,000.0	3.60	179.30	4,991.6	-270.6	3.3	-270.6	0.00	0.00	

# Cathedral Energy Services

## Planning Report

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<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site:</b>	State Antelope J-28 Pad	<b>North Reference:</b>	True
<b>Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,100.0	3.60	179.30	5,091.4	-276.9	3.4	-276.9	0.00	0.00	
5,200.0	3.60	179.30	5,191.2	-283.2	3.5	-283.2	0.00	0.00	
5,300.0	3.60	179.30	5,291.0	-289.5	3.6	-289.5	0.00	0.00	
5,400.0	3.60	179.30	5,390.8	-295.8	3.6	-295.7	0.00	0.00	
5,500.0	3.60	179.30	5,490.6	-302.0	3.7	-302.0	0.00	0.00	
5,600.0	3.60	179.30	5,590.4	-308.3	3.8	-308.3	0.00	0.00	
5,700.0	3.60	179.30	5,690.2	-314.6	3.9	-314.6	0.00	0.00	
5,722.3	3.60	179.30	5,712.4	-316.0	3.9	-316.0	0.00	0.00	Start 11° Build/Turn
5,750.0	0.56	174.62	5,740.1	-317.0	3.9	-317.0	11.00	-10.99	
5,800.0	4.95	0.77	5,790.0	-315.1	4.0	-315.1	11.00	8.78	
5,850.0	10.45	0.44	5,839.6	-308.4	4.0	-308.4	11.00	11.00	
5,900.0	15.95	0.33	5,888.2	-297.0	4.1	-297.0	11.00	11.00	
5,950.0	21.45	0.28	5,935.6	-280.9	4.2	-280.9	11.00	11.00	
6,000.0	26.95	0.25	5,981.2	-260.5	4.3	-260.4	11.00	11.00	
6,050.0	32.45	0.23	6,024.6	-235.7	4.4	-235.7	11.00	11.00	
6,100.0	37.95	0.22	6,065.4	-206.9	4.5	-206.9	11.00	11.00	
6,150.0	43.45	0.20	6,103.3	-174.3	4.6	-174.3	11.00	11.00	
6,200.0	48.95	0.19	6,137.9	-138.2	4.7	-138.2	11.00	11.00	
6,250.0	54.45	0.19	6,168.9	-99.0	4.9	-99.0	11.00	11.00	
6,300.0	59.95	0.18	6,196.0	-57.0	5.0	-57.0	11.00	11.00	
6,350.0	65.45	0.17	6,218.9	-12.6	5.1	-12.6	11.00	11.00	
6,400.0	70.95	0.17	6,237.5	33.8	5.3	33.8	11.00	11.00	
6,450.0	76.45	0.16	6,251.5	81.8	5.4	81.8	11.00	11.00	
6,500.0	81.95	0.15	6,260.9	130.9	5.5	130.9	11.00	11.00	
6,550.0	87.45	0.15	6,265.5	180.7	5.7	180.7	11.00	11.00	
6,573.2	90.00	0.15	6,266.0	203.9	5.7	203.9	11.00	11.00	LP @ 6.266' TVD, 90° - Niobrara B Target
6,600.0	90.00	0.15	6,266.0	230.6	5.8	230.7	0.00	0.00	
6,673.2	90.00	0.15	6,266.0	303.8	6.0	303.9	0.00	0.00	7" - 631' FSL, 647' FWL
6,700.0	90.00	0.15	6,266.0	330.6	6.1	330.7	0.00	0.00	
6,800.0	90.00	0.15	6,266.0	430.6	6.3	430.7	0.00	0.00	
6,900.0	90.00	0.15	6,266.0	530.6	6.6	530.7	0.00	0.00	
7,000.0	90.00	0.15	6,266.0	630.6	6.8	630.7	0.00	0.00	
7,100.0	90.00	0.15	6,266.0	730.6	7.1	730.7	0.00	0.00	
7,200.0	90.00	0.15	6,266.0	830.6	7.3	830.7	0.00	0.00	
7,300.0	90.00	0.15	6,266.0	930.6	7.6	930.7	0.00	0.00	
7,400.0	90.00	0.15	6,266.0	1,030.6	7.9	1,030.7	0.00	0.00	
7,500.0	90.00	0.15	6,266.0	1,130.6	8.1	1,130.7	0.00	0.00	
7,600.0	90.00	0.15	6,266.0	1,230.6	8.4	1,230.7	0.00	0.00	
7,700.0	90.00	0.15	6,266.0	1,330.6	8.6	1,330.7	0.00	0.00	
7,800.0	90.00	0.15	6,266.0	1,430.6	8.9	1,430.7	0.00	0.00	
7,900.0	90.00	0.15	6,266.0	1,530.6	9.1	1,530.7	0.00	0.00	
8,000.0	90.00	0.15	6,266.0	1,630.6	9.4	1,630.7	0.00	0.00	
8,100.0	90.00	0.15	6,266.0	1,730.6	9.7	1,730.7	0.00	0.00	
8,200.0	90.00	0.15	6,266.0	1,830.6	9.9	1,830.7	0.00	0.00	
8,300.0	90.00	0.15	6,266.0	1,930.6	10.2	1,930.7	0.00	0.00	
8,400.0	90.00	0.15	6,266.0	2,030.6	10.4	2,030.7	0.00	0.00	
8,500.0	90.00	0.15	6,266.0	2,130.6	10.7	2,130.7	0.00	0.00	
8,600.0	90.00	0.15	6,266.0	2,230.6	10.9	2,230.7	0.00	0.00	
8,700.0	90.00	0.15	6,266.0	2,330.6	11.2	2,330.7	0.00	0.00	
8,800.0	90.00	0.15	6,266.0	2,430.6	11.5	2,430.7	0.00	0.00	
8,900.0	90.00	0.15	6,266.0	2,530.6	11.7	2,530.7	0.00	0.00	
9,000.0	90.00	0.15	6,266.0	2,630.6	12.0	2,630.7	0.00	0.00	

# Cathedral Energy Services

## Planning Report

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<b>Site:</b>	State Antelope J-28 Pad	<b>North Reference:</b>	True
<b>Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,100.0	90.00	0.15	6,266.0	2,730.6	12.2	2,730.7	0.00	0.00	
9,200.0	90.00	0.15	6,266.0	2,830.6	12.5	2,830.7	0.00	0.00	
9,300.0	90.00	0.15	6,266.0	2,930.6	12.7	2,930.7	0.00	0.00	
9,400.0	90.00	0.15	6,266.0	3,030.6	13.0	3,030.7	0.00	0.00	
9,500.0	90.00	0.15	6,266.0	3,130.6	13.2	3,130.7	0.00	0.00	
9,600.0	90.00	0.15	6,266.0	3,230.6	13.5	3,230.7	0.00	0.00	
9,700.0	90.00	0.15	6,266.0	3,330.6	13.8	3,330.7	0.00	0.00	
9,800.0	90.00	0.15	6,266.0	3,430.6	14.0	3,430.7	0.00	0.00	
9,900.0	90.00	0.15	6,266.0	3,530.6	14.3	3,530.7	0.00	0.00	
10,000.0	90.00	0.15	6,266.0	3,630.6	14.5	3,630.7	0.00	0.00	
10,100.0	90.00	0.15	6,266.0	3,730.6	14.8	3,730.7	0.00	0.00	
10,200.0	90.00	0.15	6,266.0	3,830.6	15.0	3,830.7	0.00	0.00	
10,300.0	90.00	0.15	6,266.0	3,930.6	15.3	3,930.7	0.00	0.00	
10,400.0	90.00	0.15	6,266.0	4,030.6	15.6	4,030.7	0.00	0.00	
10,500.0	90.00	0.15	6,266.0	4,130.6	15.8	4,130.7	0.00	0.00	
10,600.0	90.00	0.15	6,266.0	4,230.6	16.1	4,230.7	0.00	0.00	
10,700.0	90.00	0.15	6,266.0	4,330.6	16.3	4,330.7	0.00	0.00	
10,800.0	90.00	0.15	6,266.0	4,430.6	16.6	4,430.7	0.00	0.00	
10,850.2	90.00	0.15	6,266.0	4,480.8	16.7	4,480.9	0.00	0.00	TD @ 10,850.2' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Antelope 14-11-28HNB I	0.00	0.00	6,266.0	4,480.8	16.7	1,382,178.43	3,324,328.57	40.376630	-104.335880
- plan hits target center									
- Point									
Antelope 14-11-28HNB T	0.00	0.00	6,266.0	142.1	5.6	1,377,839.90	3,324,374.39	40.364720	-104.335920
- plan misses target center by 3.7ft at 6511.6ft MD (6262.4 TVD, 142.4 N, 5.6 E)									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,673.2	6,266.0	7" - 631' FSL, 647' FWL		

Formations				
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)
6,573.2	6,266.0	Niobrara B Target		0.00

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site:</b>	State Antelope J-28 Pad	<b>North Reference:</b>	True
<b>Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.0	600.0	0.0	0.0	KOP @ 600'
780.0	779.9	-5.7	0.1	EOB @ Inc. = 3.6°
5,722.3	5,712.4	-316.0	3.9	Start 11° Build/Turn
6,573.2	6,266.0	203.9	5.7	LP @ 6,266' TVD, 90°
10,850.2	6,266.0	4,480.8	16.7	TD @ 10,850.2' MD



# **Bonanza Creek Energy Operating Company, LLC**

**Weld County**

**State Antelope J-28 Pad**

**State Antelope 14-11-28HNB**

**HZ**

**Plan #2**

## **Anticollision Report**

**23 January, 2013**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2
<b>Filter type:</b>	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 500.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	Systematic Ellipse
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	1/23/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,850.2	Plan #2 (HZ)	MWD	Geolink MWD	

Summary							
		Reference Measured	Offset Measured	Distance			
Site Name		Depth	Depth	Between Centres	Between Ellipses	Separation Factor	Warning
Offset Well - Wellbore - Design		(ft)	(ft)	(ft)	(ft)		
State Antelope J-28 Pad							
State Antelope E14-A11-28HNB - HZ - Plan #2		0.0	0.0	18.2			
State Antelope E14-A11-28HNB - HZ - Plan #2		500.0	500.0	18.2	18.2	10,000.000	CC, ES
State Antelope J14-F11-28HNB - HZ - Plan #2		0.0	0.0	21.9			
State Antelope J14-F11-28HNB - HZ - Plan #2		600.0	600.0	21.9	21.9	10,000.000	CC, ES
State Antelope J-F-28HNB - HZ - Plan #2		0.0	0.0	40.1			
State Antelope J-F-28HNB - HZ - Plan #2		600.0	600.0	40.1	40.1	10,000.000	CC, ES

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		State Antelope J-28 Pad - State Antelope E14-A11-28HNB - HZ - Plan #2										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-18.2	0.0	18.2	18.2	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-18.2	0.0	18.2	18.2	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-18.2	0.0	18.2	18.2	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	180.00	-18.2	0.0	18.2	18.2	0.00	N/A		
500.0	500.0	500.0	500.0	0.8	0.8	180.00	-18.2	0.0	18.2	18.2	0.00	N/A CC, ES		
600.0	600.0	599.5	599.5	1.0	1.0	-176.47	-19.5	-1.2	19.5	19.5	0.00	N/A		
700.0	700.0	698.8	698.7	1.2	1.2	13.33	-23.2	-4.8	22.0	22.0	0.00	N/A		
800.0	799.8	798.4	798.0	1.4	1.4	25.87	-28.8	-10.3	24.3	24.3	0.00	N/A		
900.0	899.6	898.3	897.5	1.6	1.6	37.33	-34.7	-15.9	26.9	26.9	0.00	N/A		
1,000.0	999.4	998.1	997.0	1.8	1.8	46.50	-40.5	-21.5	30.3	30.3	0.00	N/A		
1,100.0	1,099.3	1,098.0	1,096.5	2.0	2.0	53.66	-46.3	-27.1	34.4	34.4	0.00	N/A		
1,200.0	1,199.1	1,197.8	1,196.0	2.2	2.2	59.25	-52.1	-32.7	38.9	38.9	0.00	N/A		
1,300.0	1,298.9	1,297.6	1,295.5	2.4	2.5	63.65	-58.0	-38.3	43.6	43.6	0.00	N/A		
1,400.0	1,398.7	1,397.5	1,395.0	2.6	2.7	67.17	-63.8	-44.0	48.6	48.6	0.00	N/A		
1,500.0	1,498.5	1,497.3	1,494.5	2.8	2.9	70.03	-69.6	-49.6	53.7	53.7	0.00	N/A		
1,600.0	1,598.3	1,597.1	1,594.0	3.0	3.1	72.38	-75.4	-55.2	59.0	59.0	0.00	N/A		
1,700.0	1,698.1	1,697.0	1,693.5	3.2	3.3	74.35	-81.2	-60.8	64.3	64.3	0.00	N/A		
1,800.0	1,797.9	1,796.8	1,793.1	3.4	3.6	76.02	-87.1	-66.4	69.7	69.7	0.00	N/A		
1,900.0	1,897.7	1,896.6	1,892.6	3.6	3.8	77.44	-92.9	-72.1	75.1	75.1	0.00	N/A		
2,000.0	1,997.5	1,996.5	1,992.1	3.8	4.0	78.68	-98.7	-77.7	80.6	80.6	0.00	N/A		
2,100.0	2,097.3	2,096.3	2,091.6	4.0	4.2	79.75	-104.5	-83.3	86.1	86.1	0.00	N/A		
2,200.0	2,197.1	2,196.2	2,191.1	4.2	4.4	80.70	-110.4	-88.9	91.6	91.6	0.00	N/A		
2,300.0	2,296.9	2,296.0	2,290.6	4.4	4.7	81.54	-116.2	-94.5	97.2	97.2	0.00	N/A		
2,400.0	2,396.7	2,395.8	2,390.1	4.6	4.9	82.29	-122.0	-100.1	102.7	102.7	0.00	N/A		
2,500.0	2,496.5	2,495.7	2,489.6	4.8	5.1	82.96	-127.8	-105.8	108.3	108.3	0.00	N/A		
2,600.0	2,596.3	2,595.5	2,589.1	5.0	5.3	83.56	-133.6	-111.4	113.9	113.9	0.00	N/A		
2,700.0	2,696.1	2,695.3	2,688.6	5.2	5.6	84.11	-139.5	-117.0	119.5	119.5	0.00	N/A		
2,800.0	2,795.9	2,795.2	2,788.1	5.4	5.8	84.61	-145.3	-122.6	125.1	125.1	0.00	N/A		
2,900.0	2,895.7	2,895.0	2,887.6	5.6	6.0	85.07	-151.1	-128.2	130.8	130.8	0.00	N/A		
3,000.0	2,995.5	2,994.8	2,987.1	5.8	6.2	85.49	-156.9	-133.9	136.4	136.4	0.00	N/A		
3,100.0	3,095.3	3,094.7	3,086.7	6.0	6.5	85.87	-162.8	-139.5	142.1	142.1	0.00	N/A		
3,200.0	3,195.1	3,194.5	3,186.2	6.2	6.7	86.23	-168.6	-145.1	147.7	147.7	0.00	N/A		
3,300.0	3,294.9	3,294.4	3,285.7	6.4	6.9	86.56	-174.4	-150.7	153.4	153.4	0.00	N/A		
3,400.0	3,394.7	3,394.2	3,385.2	6.6	7.1	86.86	-180.2	-156.3	159.0	159.0	0.00	N/A		
3,500.0	3,494.5	3,494.0	3,484.7	6.8	7.3	87.15	-186.0	-161.9	164.7	164.7	0.00	N/A		
3,600.0	3,594.3	3,593.9	3,584.2	7.0	7.6	87.41	-191.9	-167.6	170.4	170.4	0.00	N/A		
3,700.0	3,694.1	3,693.7	3,683.7	7.3	7.8	87.66	-197.7	-173.2	176.0	176.0	0.00	N/A		
3,800.0	3,793.9	3,793.5	3,783.2	7.5	8.0	87.90	-203.5	-178.8	181.7	181.7	0.00	N/A		
3,900.0	3,893.7	3,893.4	3,882.7	7.7	8.2	88.12	-209.3	-184.4	187.4	187.4	0.00	N/A		
4,000.0	3,993.5	3,993.2	3,982.2	7.9	8.5	88.32	-215.2	-190.0	193.1	193.1	0.00	N/A		
4,100.0	4,093.3	4,093.0	4,081.7	8.1	8.7	88.52	-221.0	-195.7	198.7	198.7	0.00	N/A		
4,200.0	4,193.1	4,192.9	4,181.2	8.3	8.9	88.70	-226.8	-201.3	204.4	204.4	0.00	N/A		
4,300.0	4,292.9	4,292.7	4,280.7	8.5	9.1	88.87	-232.6	-206.9	210.1	210.1	0.00	N/A		
4,400.0	4,392.7	4,392.6	4,380.3	8.7	9.4	89.04	-238.4	-212.5	215.8	215.8	0.00	N/A		
4,500.0	4,492.5	4,492.4	4,479.8	8.9	9.6	89.19	-244.3	-218.1	221.5	221.5	0.00	N/A		
4,600.0	4,592.3	4,592.2	4,579.3	9.1	9.8	89.34	-250.1	-223.7	227.2	227.2	0.00	N/A		
4,700.0	4,692.1	4,692.1	4,678.8	9.3	10.0	89.48	-255.9	-229.4	232.9	232.9	0.00	N/A		
4,800.0	4,791.9	4,791.9	4,778.3	9.5	10.3	89.62	-261.7	-235.0	238.6	238.6	0.00	N/A		
4,900.0	4,891.8	4,891.7	4,877.8	9.7	10.5	89.75	-267.6	-240.6	244.3	244.3	0.00	N/A		
5,000.0	4,991.6	4,991.6	4,977.3	9.9	10.7	89.87	-273.4	-246.2	250.0	250.0	0.00	N/A		
5,100.0	5,091.4	5,091.4	5,076.8	10.1	10.9	89.99	-279.2	-251.8	255.7	255.7	0.00	N/A		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design State Antelope J-28 Pad - State Antelope E14-A11-28HNB - HZ - Plan #2													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
5,200.0	5,191.2	5,191.2	5,176.3	10.3	11.2	90.10	-285.0	-257.4	261.4	261.4	0.00	N/A				
5,300.0	5,291.0	5,291.1	5,275.8	10.5	11.4	90.20	-290.8	-263.1	267.1	267.1	0.00	N/A				
5,400.0	5,390.8	5,390.9	5,375.3	10.7	11.6	90.31	-296.7	-268.7	272.8	272.8	0.00	N/A				
5,500.0	5,490.6	5,490.7	5,474.8	11.0	11.8	90.41	-302.5	-274.3	278.5	278.5	0.00	N/A				
5,600.0	5,590.4	5,590.6	5,574.4	11.2	12.1	90.50	-308.3	-279.9	284.2	284.2	0.00	N/A				
5,700.0	5,690.2	5,690.4	5,673.9	11.4	12.3	90.59	-314.1	-285.5	289.9	289.9	0.00	N/A				
5,800.0	5,790.0	5,790.4	5,773.6	11.5	12.5	-90.91	-317.2	-291.2	295.6	295.6	0.00	N/A				
5,900.0	5,888.2	5,891.2	5,873.0	11.5	12.5	-90.66	-303.2	-296.7	301.3	301.3	0.00	N/A				
6,000.0	5,981.2	5,992.8	5,968.7	11.3	12.5	-90.73	-269.8	-302.0	306.7	306.7	0.00	N/A				
6,100.0	6,065.4	6,095.2	6,056.8	11.1	12.3	-90.82	-218.1	-306.8	311.6	311.6	0.00	N/A				
6,200.0	6,137.9	6,198.4	6,133.6	11.0	12.3	-90.88	-149.6	-310.9	315.8	315.8	0.00	N/A				
6,300.0	6,196.0	6,302.2	6,195.7	11.0	12.3	-90.92	-66.7	-314.1	319.3	319.3	0.00	N/A				
6,400.0	6,237.5	6,406.5	6,240.4	11.2	12.5	-90.93	27.3	-316.3	321.7	321.7	0.00	N/A				
6,500.0	6,260.9	6,511.1	6,265.6	11.6	13.0	-90.92	128.6	-317.4	323.0	323.0	0.00	N/A				
6,600.0	6,266.0	6,614.4	6,271.0	12.3	13.7	-90.89	231.7	-317.4	323.2	323.2	0.00	N/A				
6,700.0	6,266.0	6,714.4	6,271.0	13.2	14.5	-90.89	331.7	-317.1	323.2	323.2	0.00	N/A				
6,800.0	6,266.0	6,814.4	6,271.0	14.2	15.5	-90.89	431.7	-316.7	323.1	323.1	0.00	N/A				
6,900.0	6,266.0	6,914.4	6,271.0	15.4	16.6	-90.89	531.7	-316.4	323.0	323.0	0.00	N/A				
7,000.0	6,266.0	7,014.4	6,271.0	16.7	17.8	-90.89	631.7	-316.1	323.0	323.0	0.00	N/A				
7,100.0	6,266.0	7,114.4	6,271.0	18.1	19.1	-90.89	731.7	-315.8	322.9	322.9	0.00	N/A				
7,200.0	6,266.0	7,214.4	6,271.0	19.5	20.5	-90.89	831.7	-315.4	322.8	322.8	0.00	N/A				
7,300.0	6,266.0	7,314.4	6,271.0	20.9	21.9	-90.89	931.7	-315.1	322.8	322.8	0.00	N/A				
7,400.0	6,266.0	7,414.4	6,271.0	22.5	23.4	-90.89	1,031.7	-314.8	322.7	322.7	0.00	N/A				
7,500.0	6,266.0	7,514.4	6,271.0	24.0	24.9	-90.89	1,131.7	-314.5	322.6	322.6	0.00	N/A				
7,600.0	6,266.0	7,614.4	6,271.0	25.6	26.5	-90.89	1,231.7	-314.2	322.6	322.6	0.00	N/A				
7,700.0	6,266.0	7,714.4	6,271.0	27.2	28.0	-90.89	1,331.7	-313.8	322.5	322.5	0.00	N/A				
7,800.0	6,266.0	7,814.4	6,271.0	28.8	29.6	-90.89	1,431.7	-313.5	322.4	322.4	0.00	N/A				
7,900.0	6,266.0	7,914.4	6,271.0	30.4	31.2	-90.89	1,531.7	-313.2	322.4	322.4	0.00	N/A				
8,000.0	6,266.0	8,014.4	6,271.0	32.0	32.8	-90.89	1,631.7	-312.9	322.3	322.3	0.00	N/A				
8,100.0	6,266.0	8,114.4	6,271.0	33.7	34.5	-90.89	1,731.7	-312.5	322.2	322.2	0.00	N/A				
8,200.0	6,266.0	8,214.4	6,271.0	35.4	36.1	-90.89	1,831.7	-312.2	322.2	322.2	0.00	N/A				
8,300.0	6,266.0	8,314.4	6,271.0	37.0	37.8	-90.89	1,931.7	-311.9	322.1	322.1	0.00	N/A				
8,400.0	6,266.0	8,414.4	6,271.0	38.7	39.4	-90.89	2,031.7	-311.6	322.0	322.0	0.00	N/A				
8,500.0	6,266.0	8,514.4	6,271.0	40.4	41.1	-90.89	2,131.7	-311.2	322.0	322.0	0.00	N/A				
8,600.0	6,266.0	8,614.4	6,271.0	42.1	42.8	-90.89	2,231.7	-310.9	321.9	321.9	0.00	N/A				
8,700.0	6,266.0	8,714.4	6,271.0	43.8	44.4	-90.89	2,331.7	-310.6	321.8	321.8	0.00	N/A				
8,800.0	6,266.0	8,814.4	6,271.0	45.5	46.1	-90.89	2,431.7	-310.3	321.8	321.8	0.00	N/A				
8,900.0	6,266.0	8,914.4	6,271.0	47.2	47.8	-90.89	2,531.7	-310.0	321.7	321.7	0.00	N/A				
9,000.0	6,266.0	9,014.4	6,271.0	48.9	49.5	-90.89	2,631.7	-309.6	321.6	321.6	0.00	N/A				
9,100.0	6,266.0	9,114.4	6,271.0	50.6	51.2	-90.89	2,731.7	-309.3	321.6	321.6	0.00	N/A				
9,200.0	6,266.0	9,214.4	6,271.0	52.3	52.9	-90.89	2,831.7	-309.0	321.5	321.5	0.00	N/A				
9,300.0	6,266.0	9,314.4	6,271.0	54.0	54.6	-90.89	2,931.7	-308.7	321.4	321.4	0.00	N/A				
9,400.0	6,266.0	9,414.4	6,271.0	55.8	56.3	-90.89	3,031.7	-308.3	321.4	321.4	0.00	N/A				
9,500.0	6,266.0	9,514.4	6,271.0	57.5	58.1	-90.89	3,131.7	-308.0	321.3	321.3	0.00	N/A				
9,600.0	6,266.0	9,614.4	6,271.0	59.2	59.8	-90.89	3,231.7	-307.7	321.2	321.2	0.00	N/A				
9,700.0	6,266.0	9,714.4	6,271.0	60.9	61.5	-90.89	3,331.7	-307.4	321.2	321.2	0.00	N/A				
9,800.0	6,266.0	9,814.4	6,271.0	62.6	63.2	-90.89	3,431.7	-307.1	321.1	321.1	0.00	N/A				
9,900.0	6,266.0	9,914.4	6,271.0	64.4	64.9	-90.89	3,531.7	-306.7	321.0	321.0	0.00	N/A				
10,000.0	6,266.0	10,014.4	6,271.0	66.1	66.7	-90.89	3,631.7	-306.4	321.0	321.0	0.00	N/A				
10,100.0	6,266.0	10,114.4	6,271.0	67.8	68.4	-90.89	3,731.7	-306.1	320.9	320.9	0.00	N/A				
10,200.0	6,266.0	10,214.4	6,271.0	69.6	70.1	-90.89	3,831.7	-305.8	320.9	320.9	0.00	N/A				
10,300.0	6,266.0	10,314.4	6,271.0	71.3	71.8	-90.89	3,931.7	-305.4	320.8	320.8	0.00	N/A				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> State Antelope J-28 Pad - State Antelope E14-A11-28HNB - HZ - Plan #2													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,266.0	10,414.4	6,271.0	73.0	73.6	-90.89	4,031.7	-305.1	320.7	320.7	0.00	N/A		
10,500.0	6,266.0	10,514.4	6,271.0	74.8	75.3	-90.89	4,131.7	-304.8	320.7	320.7	0.00	N/A		
10,600.0	6,266.0	10,614.4	6,271.0	76.5	77.0	-90.89	4,231.7	-304.5	320.6	320.6	0.00	N/A		
10,700.0	6,266.0	10,714.4	6,271.0	78.2	78.8	-90.89	4,331.7	-304.2	320.5	320.5	0.00	N/A		
10,800.0	6,266.0	10,814.4	6,271.0	80.0	80.5	-90.89	4,431.7	-303.8	320.5	320.5	0.00	N/A		
10,838.2	6,266.0	10,852.6	6,271.0	80.6	81.1	-90.89	4,469.9	-303.7	320.4	320.4	0.00	N/A		
10,850.2	6,266.0	10,860.2	6,271.0	80.8	81.3	-90.89	4,477.5	-303.7	320.5	320.5	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design State Antelope J-28 Pad - State Antelope J14-F11-28HNB - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	21.9	0.0	21.9					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	21.9	0.0	21.9	21.9	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	21.9	0.0	21.9	21.9	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	21.9	0.0	21.9	21.9	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	21.9	0.0	21.9	21.9	0.00	N/A		
500.0	500.0	500.0	500.0	0.8	0.8	0.00	21.9	0.0	21.9	21.9	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	0.00	21.9	0.0	21.9	21.9	0.00	N/A CC, ES		
700.0	700.0	700.0	700.0	1.2	1.2	-179.35	21.9	0.0	23.6	23.6	0.00	N/A		
800.0	799.8	800.6	800.5	1.4	1.4	-177.06	20.5	1.2	27.5	27.5	0.00	N/A		
900.0	899.6	901.2	901.0	1.6	1.6	-170.76	16.5	4.6	30.1	30.1	0.00	N/A		
1,000.0	999.4	1,001.4	1,000.9	1.8	1.8	-160.67	10.1	10.2	31.2	31.2	0.00	N/A		
1,100.0	1,099.3	1,101.3	1,100.3	2.0	2.0	-150.53	3.2	16.2	33.0	33.0	0.00	N/A		
1,200.0	1,199.1	1,201.1	1,199.7	2.2	2.2	-141.68	-3.7	22.2	35.7	35.7	0.00	N/A		
1,300.0	1,298.9	1,300.9	1,299.1	2.4	2.4	-134.23	-10.6	28.2	39.2	39.2	0.00	N/A		
1,400.0	1,398.7	1,400.7	1,398.5	2.6	2.6	-128.06	-17.5	34.2	43.2	43.2	0.00	N/A		
1,500.0	1,498.5	1,500.5	1,497.9	2.8	2.8	-122.99	-24.4	40.2	47.6	47.6	0.00	N/A		
1,600.0	1,598.3	1,600.4	1,597.3	3.0	3.1	-118.79	-31.3	46.2	52.3	52.3	0.00	N/A		
1,700.0	1,698.1	1,700.2	1,696.7	3.2	3.3	-115.31	-38.2	52.1	57.2	57.2	0.00	N/A		
1,800.0	1,797.9	1,800.0	1,796.1	3.4	3.5	-112.39	-45.1	58.1	62.4	62.4	0.00	N/A		
1,900.0	1,897.7	1,899.8	1,895.5	3.6	3.7	-109.91	-52.0	64.1	67.6	67.6	0.00	N/A		
2,000.0	1,997.5	1,999.7	1,994.9	3.8	4.0	-107.80	-58.9	70.1	73.0	73.0	0.00	N/A		
2,100.0	2,097.3	2,099.5	2,094.3	4.0	4.2	-105.98	-65.8	76.1	78.4	78.4	0.00	N/A		
2,200.0	2,197.1	2,199.3	2,193.7	4.2	4.4	-104.40	-72.7	82.1	84.0	84.0	0.00	N/A		
2,300.0	2,296.9	2,299.1	2,293.1	4.4	4.7	-103.01	-79.6	88.1	89.5	89.5	0.00	N/A		
2,400.0	2,396.7	2,398.9	2,392.5	4.6	4.9	-101.79	-86.5	94.1	95.2	95.2	0.00	N/A		
2,500.0	2,496.5	2,498.8	2,491.9	4.8	5.1	-100.70	-93.4	100.1	100.8	100.8	0.00	N/A		
2,600.0	2,596.3	2,598.6	2,591.3	5.0	5.4	-99.73	-100.3	106.1	106.5	106.5	0.00	N/A		
2,700.0	2,696.1	2,698.4	2,690.8	5.2	5.6	-98.86	-107.2	112.1	112.3	112.3	0.00	N/A		
2,800.0	2,795.9	2,798.2	2,790.2	5.4	5.8	-98.07	-114.1	118.0	118.0	118.0	0.00	N/A		
2,900.0	2,895.7	2,898.1	2,889.6	5.6	6.1	-97.35	-121.0	124.0	123.8	123.8	0.00	N/A		
3,000.0	2,995.5	2,997.9	2,989.0	5.8	6.3	-96.70	-127.9	130.0	129.6	129.6	0.00	N/A		
3,100.0	3,095.3	3,097.7	3,088.4	6.0	6.5	-96.11	-134.8	136.0	135.4	135.4	0.00	N/A		
3,200.0	3,195.1	3,197.5	3,187.8	6.2	6.8	-95.56	-141.7	142.0	141.2	141.2	0.00	N/A		
3,300.0	3,294.9	3,297.3	3,287.2	6.4	7.0	-95.06	-148.6	148.0	147.0	147.0	0.00	N/A		
3,400.0	3,394.7	3,397.2	3,386.6	6.6	7.2	-94.60	-155.5	154.0	152.8	152.8	0.00	N/A		
3,500.0	3,494.5	3,497.0	3,486.0	6.8	7.5	-94.17	-162.4	160.0	158.7	158.7	0.00	N/A		
3,600.0	3,594.3	3,596.8	3,585.4	7.0	7.7	-93.77	-169.3	166.0	164.5	164.5	0.00	N/A		
3,700.0	3,694.1	3,696.6	3,684.8	7.3	7.9	-93.39	-176.2	172.0	170.4	170.4	0.00	N/A		
3,800.0	3,793.9	3,796.5	3,784.2	7.5	8.2	-93.05	-183.1	178.0	176.2	176.2	0.00	N/A		
3,900.0	3,893.7	3,896.3	3,883.6	7.7	8.4	-92.72	-190.0	183.9	182.1	182.1	0.00	N/A		
4,000.0	3,993.5	3,996.1	3,983.0	7.9	8.6	-92.42	-196.9	189.9	188.0	188.0	0.00	N/A		
4,100.0	4,093.3	4,095.9	4,082.4	8.1	8.9	-92.13	-203.8	195.9	193.9	193.9	0.00	N/A		
4,200.0	4,193.1	4,195.7	4,181.8	8.3	9.1	-91.86	-210.7	201.9	199.8	199.8	0.00	N/A		
4,300.0	4,292.9	4,295.6	4,281.2	8.5	9.3	-91.61	-217.7	207.9	205.7	205.7	0.00	N/A		
4,400.0	4,392.7	4,395.4	4,380.6	8.7	9.6	-91.37	-224.6	213.9	211.6	211.6	0.00	N/A		
4,500.0	4,492.5	4,495.2	4,480.0	8.9	9.8	-91.14	-231.5	219.9	217.5	217.5	0.00	N/A		
4,600.0	4,592.3	4,595.0	4,579.4	9.1	10.1	-90.93	-238.4	225.9	223.4	223.4	0.00	N/A		
4,700.0	4,692.1	4,694.9	4,678.8	9.3	10.3	-90.72	-245.3	231.9	229.3	229.3	0.00	N/A		
4,800.0	4,791.9	4,794.7	4,778.2	9.5	10.5	-90.53	-252.2	237.9	235.2	235.2	0.00	N/A		
4,900.0	4,891.8	4,894.5	4,877.6	9.7	10.8	-90.35	-259.1	243.9	241.1	241.1	0.00	N/A		
5,000.0	4,991.6	4,994.3	4,977.0	9.9	11.0	-90.17	-266.0	249.8	247.0	247.0	0.00	N/A		
5,100.0	5,091.4	5,094.1	5,076.4	10.1	11.2	-90.00	-272.9	255.8	252.9	252.9	0.00	N/A		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		State Antelope J-28 Pad - State Antelope J14-F11-28HNB - HZ - Plan #2											Offset Site Error:		0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
5,200.0	5,191.2	5,194.0	5,175.8	10.3	11.5	-89.84	-279.8	261.8	258.8	258.8	0.00	N/A				
5,300.0	5,291.0	5,293.8	5,275.2	10.5	11.7	-89.69	-286.7	267.8	264.7	264.7	0.00	N/A				
5,400.0	5,390.8	5,393.6	5,374.6	10.7	11.9	-89.55	-293.6	273.8	270.7	270.7	0.00	N/A				
5,500.0	5,490.6	5,493.4	5,474.0	11.0	12.2	-89.41	-300.5	279.8	276.6	276.6	0.00	N/A				
5,600.0	5,590.4	5,593.3	5,573.4	11.2	12.4	-89.27	-307.4	285.8	282.5	282.5	0.00	N/A				
5,700.0	5,690.2	5,693.1	5,672.8	11.4	12.6	-89.15	-314.3	291.8	288.4	288.4	0.00	N/A				
5,800.0	5,790.0	5,792.9	5,772.3	11.5	12.8	89.28	-316.8	297.8	294.4	294.4	0.00	N/A				
5,900.0	5,888.2	5,893.1	5,871.0	11.5	12.8	89.56	-301.3	303.8	300.2	300.2	0.00	N/A				
6,000.0	5,981.2	5,993.8	5,965.3	11.3	12.8	89.50	-266.9	309.6	305.8	305.8	0.00	N/A				
6,100.0	6,065.4	6,095.1	6,051.7	11.1	12.6	89.40	-214.7	315.0	310.9	310.9	0.00	N/A				
6,200.0	6,137.9	6,196.8	6,126.7	11.0	12.5	89.30	-146.3	319.8	315.3	315.3	0.00	N/A				
6,300.0	6,196.0	6,299.0	6,187.3	11.0	12.4	89.22	-64.3	323.7	318.9	318.9	0.00	N/A				
6,400.0	6,237.5	6,401.5	6,230.9	11.2	12.5	89.16	28.2	326.6	321.5	321.5	0.00	N/A				
6,500.0	6,260.9	6,504.2	6,255.5	11.6	12.9	89.12	127.8	328.4	323.0	323.0	0.00	N/A				
6,600.0	6,266.0	6,606.3	6,261.0	12.3	13.5	89.11	229.6	329.1	323.3	323.3	0.00	N/A				
6,700.0	6,266.0	6,706.3	6,261.0	13.2	14.3	89.11	329.6	329.4	323.4	323.4	0.00	N/A				
6,800.0	6,266.0	6,806.3	6,261.0	14.2	15.2	89.11	429.6	329.7	323.5	323.5	0.00	N/A				
6,900.0	6,266.0	6,906.3	6,261.0	15.4	16.2	89.11	529.6	330.1	323.5	323.5	0.00	N/A				
7,000.0	6,266.0	7,006.3	6,261.0	16.7	17.4	89.11	629.6	330.4	323.6	323.6	0.00	N/A				
7,100.0	6,266.0	7,106.3	6,261.0	18.1	18.7	89.11	729.6	330.7	323.6	323.6	0.00	N/A				
7,200.0	6,266.0	7,206.3	6,261.0	19.5	20.0	89.11	829.6	331.0	323.7	323.7	0.00	N/A				
7,300.0	6,266.0	7,306.3	6,261.0	20.9	21.4	89.12	929.6	331.3	323.8	323.8	0.00	N/A				
7,400.0	6,266.0	7,406.3	6,261.0	22.5	22.9	89.12	1,029.6	331.6	323.8	323.8	0.00	N/A				
7,500.0	6,266.0	7,506.3	6,261.0	24.0	24.4	89.12	1,129.6	332.0	323.9	323.9	0.00	N/A				
7,600.0	6,266.0	7,606.3	6,261.0	25.6	25.9	89.12	1,229.6	332.3	324.0	324.0	0.00	N/A				
7,700.0	6,266.0	7,706.3	6,261.0	27.2	27.4	89.12	1,329.6	332.6	324.0	324.0	0.00	N/A				
7,800.0	6,266.0	7,806.3	6,261.0	28.8	29.0	89.12	1,429.6	332.9	324.1	324.1	0.00	N/A				
7,900.0	6,266.0	7,906.3	6,261.0	30.4	30.6	89.12	1,529.6	333.2	324.1	324.1	0.00	N/A				
8,000.0	6,266.0	8,006.3	6,261.0	32.0	32.2	89.12	1,629.6	333.6	324.2	324.2	0.00	N/A				
8,100.0	6,266.0	8,106.3	6,261.0	33.7	33.8	89.12	1,729.6	333.9	324.3	324.3	0.00	N/A				
8,200.0	6,266.0	8,206.3	6,261.0	35.4	35.5	89.12	1,829.6	334.2	324.3	324.3	0.00	N/A				
8,300.0	6,266.0	8,306.3	6,261.0	37.0	37.1	89.12	1,929.6	334.5	324.4	324.4	0.00	N/A				
8,400.0	6,266.0	8,406.3	6,261.0	38.7	38.8	89.12	2,029.6	334.8	324.5	324.5	0.00	N/A				
8,500.0	6,266.0	8,506.3	6,261.0	40.4	40.5	89.12	2,129.6	335.2	324.5	324.5	0.00	N/A				
8,600.0	6,266.0	8,606.3	6,261.0	42.1	42.1	89.12	2,229.6	335.5	324.6	324.6	0.00	N/A				
8,700.0	6,266.0	8,706.3	6,261.0	43.8	43.8	89.12	2,329.6	335.8	324.6	324.6	0.00	N/A				
8,800.0	6,266.0	8,806.3	6,261.0	45.5	45.5	89.12	2,429.6	336.1	324.7	324.7	0.00	N/A				
8,900.0	6,266.0	8,906.3	6,261.0	47.2	47.2	89.12	2,529.6	336.4	324.8	324.8	0.00	N/A				
9,000.0	6,266.0	9,006.3	6,261.0	48.9	48.9	89.12	2,629.6	336.8	324.8	324.8	0.00	N/A				
9,100.0	6,266.0	9,106.3	6,261.0	50.6	50.6	89.12	2,729.6	337.1	324.9	324.9	0.00	N/A				
9,200.0	6,266.0	9,206.3	6,261.0	52.3	52.3	89.12	2,829.6	337.4	325.0	325.0	0.00	N/A				
9,300.0	6,266.0	9,306.3	6,261.0	54.0	54.0	89.12	2,929.6	337.7	325.0	325.0	0.00	N/A				
9,400.0	6,266.0	9,406.3	6,261.0	55.8	55.7	89.12	3,029.6	338.0	325.1	325.1	0.00	N/A				
9,500.0	6,266.0	9,506.3	6,261.0	57.5	57.4	89.12	3,129.6	338.4	325.1	325.1	0.00	N/A				
9,600.0	6,266.0	9,606.3	6,261.0	59.2	59.1	89.12	3,229.6	338.7	325.2	325.2	0.00	N/A				
9,700.0	6,266.0	9,706.3	6,261.0	60.9	60.8	89.12	3,329.6	339.0	325.3	325.3	0.00	N/A				
9,800.0	6,266.0	9,806.3	6,261.0	62.6	62.5	89.12	3,429.6	339.3	325.3	325.3	0.00	N/A				
9,900.0	6,266.0	9,906.3	6,261.0	64.4	64.3	89.12	3,529.6	339.6	325.4	325.4	0.00	N/A				
10,000.0	6,266.0	10,006.3	6,261.0	66.1	66.0	89.12	3,629.6	340.0	325.5	325.5	0.00	N/A				
10,100.0	6,266.0	10,106.3	6,261.0	67.8	67.7	89.12	3,729.6	340.3	325.5	325.5	0.00	N/A				
10,200.0	6,266.0	10,206.3	6,261.0	69.6	69.4	89.12	3,829.6	340.6	325.6	325.6	0.00	N/A				
10,300.0	6,266.0	10,306.3	6,261.0	71.3	71.2	89.12	3,929.6	340.9	325.7	325.7	0.00	N/A				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> State Antelope J-28 Pad - State Antelope J14-F11-28HNB - HZ - Plan #2													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,266.0	10,406.3	6,261.0	73.0	72.9	89.12	4,029.6	341.2	325.7	325.7	0.00	N/A		
10,500.0	6,266.0	10,506.3	6,261.0	74.8	74.6	89.12	4,129.6	341.6	325.8	325.8	0.00	N/A		
10,600.0	6,266.0	10,606.3	6,261.0	76.5	76.3	89.12	4,229.6	341.9	325.8	325.8	0.00	N/A		
10,700.0	6,266.0	10,706.3	6,261.0	78.2	78.1	89.12	4,329.6	342.2	325.9	325.9	0.00	N/A		
10,800.0	6,266.0	10,806.3	6,261.0	80.0	79.8	89.12	4,429.6	342.5	326.0	326.0	0.00	N/A		
10,850.2	6,266.0	10,856.5	6,261.0	80.8	80.7	89.12	4,479.8	342.7	326.0	326.0	0.00	N/A		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design State Antelope J-28 Pad - State Antelope J-F-28HNB - HZ - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	0.00	40.1	0.0	40.1						
100.0	100.0	100.0	100.0	0.1	0.1	0.00	40.1	0.0	40.1	40.1	0.00	N/A			
200.0	200.0	200.0	200.0	0.3	0.3	0.00	40.1	0.0	40.1	40.1	0.00	N/A			
300.0	300.0	300.0	300.0	0.5	0.5	0.00	40.1	0.0	40.1	40.1	0.00	N/A			
400.0	400.0	400.0	400.0	0.7	0.7	0.00	40.1	0.0	40.1	40.1	0.00	N/A			
500.0	500.0	500.0	500.0	0.8	0.8	0.00	40.1	0.0	40.1	40.1	0.00	N/A			
600.0	600.0	600.0	600.0	1.0	1.0	0.00	40.1	0.0	40.1	40.1	0.00	N/A CC, ES			
700.0	700.0	700.0	700.0	1.2	1.2	-179.33	40.1	0.0	41.8	41.8	0.00	N/A			
800.0	799.8	799.8	799.8	1.4	1.4	-179.40	40.1	0.0	47.0	47.0	0.00	N/A			
900.0	899.6	900.6	900.6	1.6	1.5	-177.82	39.2	1.5	52.4	52.4	0.00	N/A			
1,000.0	999.4	1,001.3	1,001.2	1.8	1.7	-173.38	36.4	6.0	56.2	56.2	0.00	N/A			
1,100.0	1,099.3	1,101.8	1,101.2	2.0	1.9	-166.35	31.8	13.5	59.1	59.1	0.00	N/A			
1,200.0	1,199.1	1,201.8	1,200.4	2.2	2.2	-156.95	25.4	24.0	62.1	62.1	0.00	N/A			
1,300.0	1,298.9	1,301.0	1,298.7	2.4	2.4	-146.85	17.9	36.1	66.6	66.6	0.00	N/A			
1,400.0	1,398.7	1,400.3	1,396.9	2.6	2.7	-138.24	10.5	48.3	72.9	72.9	0.00	N/A			
1,500.0	1,498.5	1,499.5	1,495.1	2.8	2.9	-131.12	3.0	60.5	80.6	80.6	0.00	N/A			
1,600.0	1,598.3	1,598.8	1,593.3	3.0	3.2	-125.30	-4.4	72.7	89.3	89.3	0.00	N/A			
1,700.0	1,698.1	1,698.0	1,691.6	3.2	3.5	-120.55	-11.9	84.8	98.8	98.8	0.00	N/A			
1,800.0	1,797.9	1,797.3	1,789.8	3.4	3.8	-116.65	-19.4	97.0	108.8	108.8	0.00	N/A			
1,900.0	1,897.7	1,896.5	1,888.0	3.6	4.1	-113.42	-26.8	109.2	119.3	119.3	0.00	N/A			
2,000.0	1,997.5	1,995.8	1,986.2	3.8	4.3	-110.71	-34.3	121.3	130.0	130.0	0.00	N/A			
2,100.0	2,097.3	2,095.0	2,084.4	4.0	4.6	-108.42	-41.7	133.5	141.0	141.0	0.00	N/A			
2,200.0	2,197.1	2,194.3	2,182.6	4.2	4.9	-106.46	-49.2	145.7	152.2	152.2	0.00	N/A			
2,300.0	2,296.9	2,293.5	2,280.8	4.4	5.2	-104.77	-56.6	157.8	163.6	163.6	0.00	N/A			
2,400.0	2,396.7	2,392.8	2,379.1	4.6	5.5	-103.30	-64.1	170.0	175.1	175.1	0.00	N/A			
2,500.0	2,496.5	2,492.0	2,477.3	4.8	5.8	-102.02	-71.6	182.2	186.6	186.6	0.00	N/A			
2,600.0	2,596.3	2,591.3	2,575.5	5.0	6.1	-100.88	-79.0	194.4	198.3	198.3	0.00	N/A			
2,700.0	2,696.1	2,690.5	2,673.7	5.2	6.4	-99.87	-86.5	206.5	210.0	210.0	0.00	N/A			
2,800.0	2,795.9	2,789.7	2,771.9	5.4	6.7	-98.97	-93.9	218.7	221.8	221.8	0.00	N/A			
2,900.0	2,895.7	2,889.0	2,870.1	5.6	7.0	-98.15	-101.4	230.9	233.6	233.6	0.00	N/A			
3,000.0	2,995.5	2,988.2	2,968.4	5.8	7.3	-97.42	-108.8	243.0	245.5	245.5	0.00	N/A			
3,100.0	3,095.3	3,087.5	3,066.6	6.0	7.6	-96.75	-116.3	255.2	257.4	257.4	0.00	N/A			
3,200.0	3,195.1	3,186.7	3,164.8	6.2	7.9	-96.15	-123.8	267.4	269.3	269.3	0.00	N/A			
3,300.0	3,294.9	3,286.0	3,263.0	6.4	8.2	-95.59	-131.2	279.6	281.3	281.3	0.00	N/A			
3,400.0	3,394.7	3,385.2	3,361.2	6.6	8.5	-95.08	-138.7	291.7	293.3	293.3	0.00	N/A			
3,500.0	3,494.5	3,484.5	3,459.4	6.8	8.8	-94.61	-146.1	303.9	305.3	305.3	0.00	N/A			
3,600.0	3,594.3	3,583.7	3,557.6	7.0	9.1	-94.18	-153.6	316.1	317.3	317.3	0.00	N/A			
3,700.0	3,694.1	3,683.0	3,655.9	7.3	9.4	-93.77	-161.0	328.2	329.4	329.4	0.00	N/A			
3,800.0	3,793.9	3,782.2	3,754.1	7.5	9.7	-93.40	-168.5	340.4	341.4	341.4	0.00	N/A			
3,900.0	3,893.7	3,881.5	3,852.3	7.7	10.0	-93.05	-176.0	352.6	353.5	353.5	0.00	N/A			
4,000.0	3,993.5	3,980.7	3,950.5	7.9	10.3	-92.72	-183.4	364.8	365.6	365.6	0.00	N/A			
4,100.0	4,093.3	4,079.9	4,048.7	8.1	10.6	-92.42	-190.9	376.9	377.7	377.7	0.00	N/A			
4,200.0	4,193.1	4,179.2	4,146.9	8.3	10.9	-92.13	-198.3	389.1	389.8	389.8	0.00	N/A			
4,300.0	4,292.9	4,278.4	4,245.1	8.5	11.2	-91.86	-205.8	401.3	401.9	401.9	0.00	N/A			
4,400.0	4,392.7	4,377.7	4,343.4	8.7	11.5	-91.61	-213.2	413.4	414.0	414.0	0.00	N/A			
4,500.0	4,492.5	4,476.9	4,441.6	8.9	11.8	-91.37	-220.7	425.6	426.1	426.1	0.00	N/A			
4,600.0	4,592.3	4,576.2	4,539.8	9.1	12.1	-91.15	-228.2	437.8	438.3	438.3	0.00	N/A			
4,700.0	4,692.1	4,675.4	4,638.0	9.3	12.4	-90.93	-235.6	450.0	450.4	450.4	0.00	N/A			
4,800.0	4,791.9	4,774.7	4,736.2	9.5	12.7	-90.73	-243.1	462.1	462.6	462.6	0.00	N/A			
4,900.0	4,891.8	4,873.9	4,834.4	9.7	13.0	-90.54	-250.5	474.3	474.7	474.7	0.00	N/A			
5,000.0	4,991.6	4,973.2	4,932.6	9.9	13.3	-90.36	-258.0	486.5	486.9	486.9	0.00	N/A			
5,100.0	5,091.4	5,072.4	5,030.9	10.1	13.6	-90.18	-265.4	498.6	499.1	499.1	0.00	N/A			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

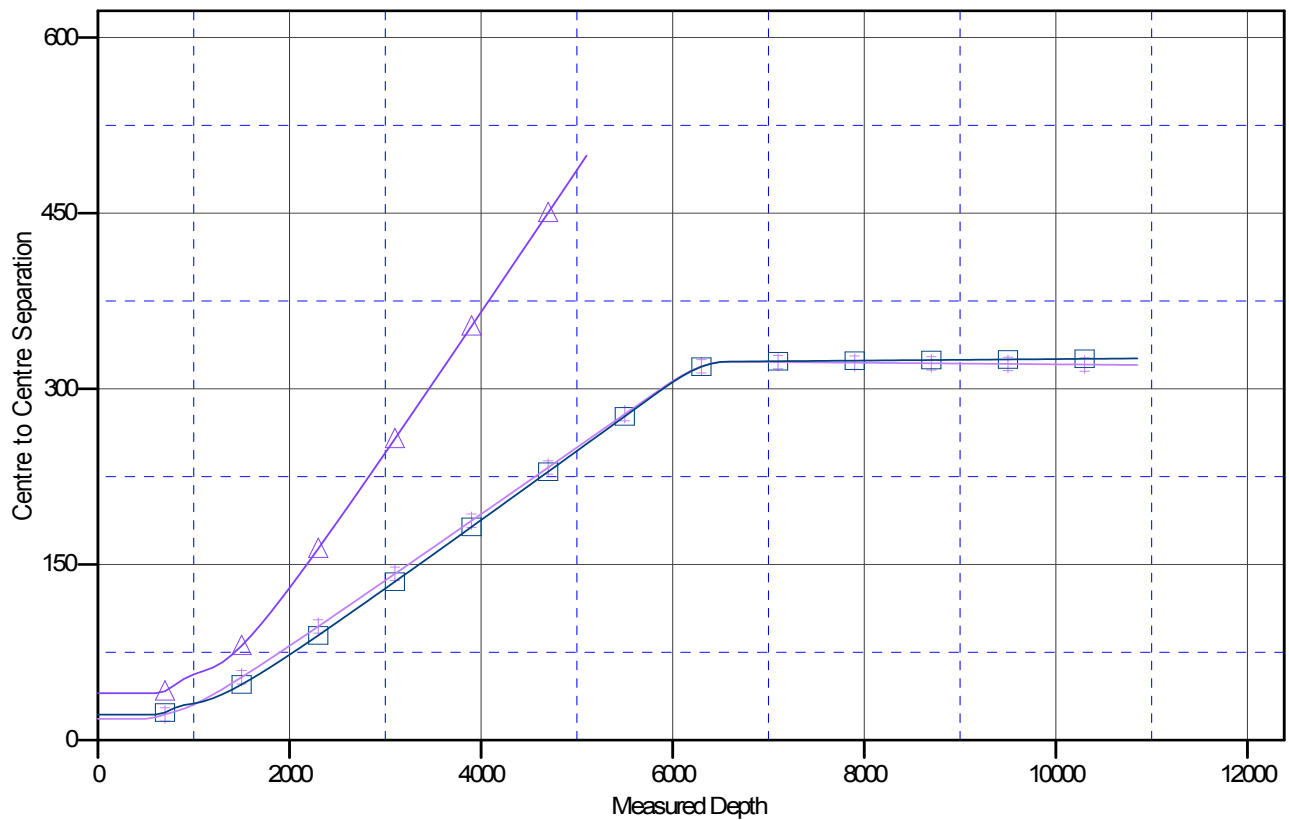
## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well State Antelope 14-11-28HNB
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Reference Site:</b>	State Antelope J-28 Pad	<b>MD Reference:</b>	KB = 15' @ 4619.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	State Antelope 14-11-28HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB = 15' @ 4619.0ft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: State Antelope 14-11-28HNB  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.75°

### Ladder Plot



### LEGEND

✚ State Antelope E14-A11-28HNB, HZ, Plan #2 V0
 ⊞ State Antelope J14-F11-28HNB, HZ, Plan #2 V0
 ▲ State Antelope J-F-28HNB, HZ, Plan #2 V0